This document contains Part 5 (pp.68–74) of Chapter 2 of the National Coastal Condition Report III.

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National Coastal Condition Report III

Chapter 2: National Coastal Condition

Part 5 of 5

December 2008

Assessment and Advisory Data

Fish Consumption Advisories

A total of 90 fish consumption advisories were in effect for the estuarine and coastal marine waters of the United States in 2003, including about 77% of the coastal waters of the conterminous 48 states (Figure 2-17). In addition, 30 fish consumption advisories were in effect for the Great Lakes and their connecting waters. An advisory may represent one waterbody or one type of waterbody within a state's jurisdiction and may cover one or more species of fish. Some advisories are issued as a single statewide advisory for all estuarine or marine waters within a state (Table 2-5). Although the statewide coastal advisories have placed a large proportion of the nation's coastal waters under advisory, these advisories are often issued for the larger-size classes of predatory species (e.g., bluefish, king mackerel) because larger, older individuals have had more time to be exposed to and accumulate one or more chemical contaminants in their tissues than younger individuals (U.S. EPA, 2004b).

The number and geographic extent of advisories can serve as indicators of the level of contamination in estuarine and marine fish and shellfish, but a number of other factors must also be taken into account. For example, the methods and intensity of sampling and the contaminant levels at which advisories are issued often differ among the states. In the states with statewide coastal advisories, one advisory may cover many thousands of square miles of coastal waters and many hundreds of miles of shoreline waters. Although advisories in U.S. estuarine, Great Lakes, and coastal marine waters have been issued for a total of 23 individual chemical contaminants, most advisories issued have resulted from four primary contaminants: PCBs,

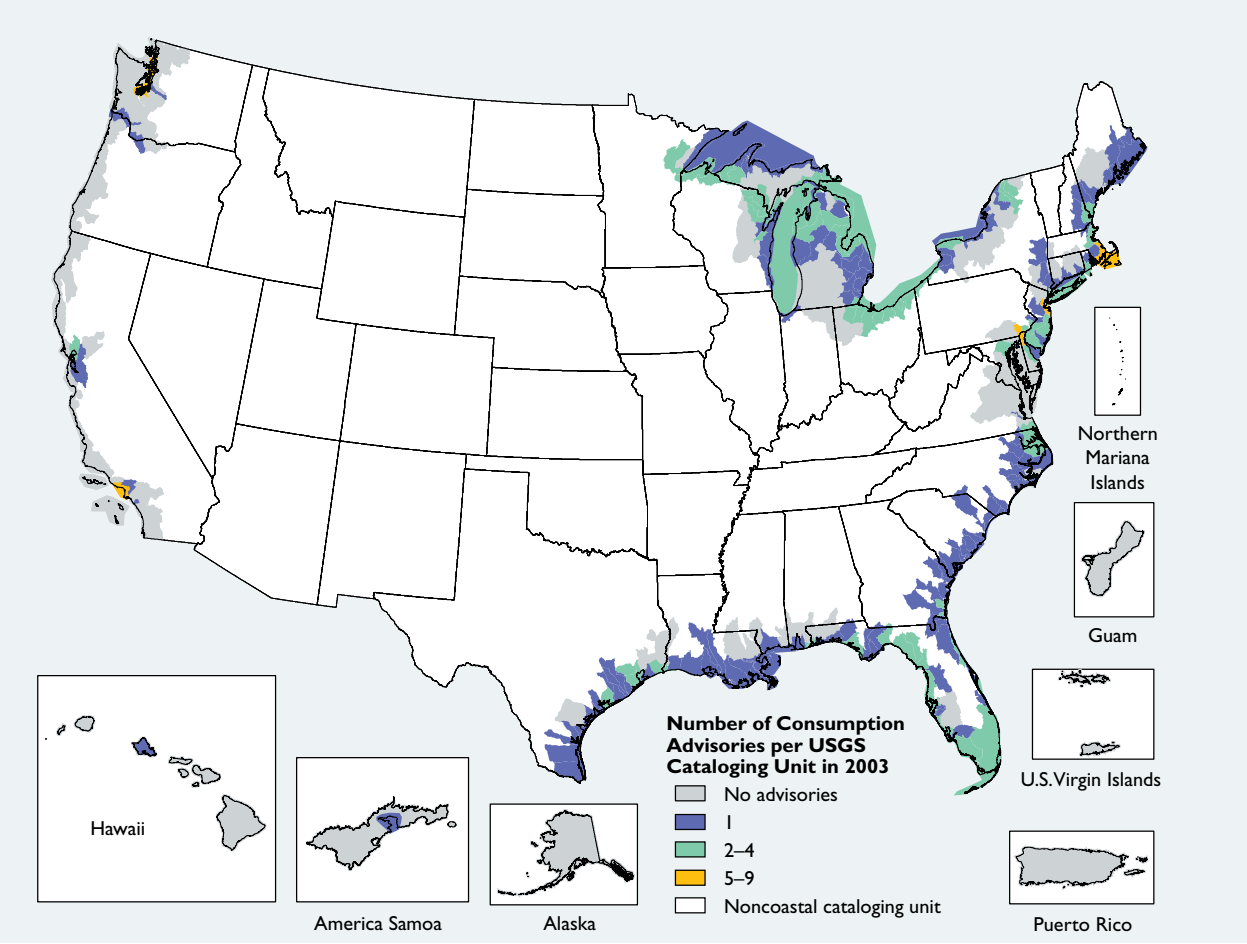

Figure 2-17. The number of fish consumption advisories active in 2003 for U.S. coastal waters (U.S. EPA, 2004b).

mercury, DDT and its degradation products (DDD and DDE), and dioxins/furans. These four chemical contaminant groups were responsible, at least in part, for 92% of all fish consumption advisories in effect in U.S. estuarine and coastal marine waters in 2003 (Figure 2-18; Tables 2-6 and 2-7). These chemical contaminants are biologically accumulated (bioaccumulated) in the tissues of aquatic organisms to concentrations many times higher than concentrations in seawater (Figure 2-19). In addition, concentrations of these contaminants in the tissues of aquatic organisms may be increased at each successive level of the food web. As a result, top predators in a food web may have concentrations of these chemicals in their tissues that can be a million times higher than the concentrations in seawater. A direct comparison of fish advisory contaminants and sediment contaminants is not possible because states often issue advisories for groups of chemicals; however, 4 of the top 10 contaminants associated with fish advisories (PCBs, dioxins, DDT, and dieldrin) are among the contaminants most often responsible for a Tier 1 National Sediment Inventory classification (i.e., associated adverse effects to aquatic life or human health are probable) of waterbodies based on potential human health effects (U.S. EPA, 2004b; 2004c).

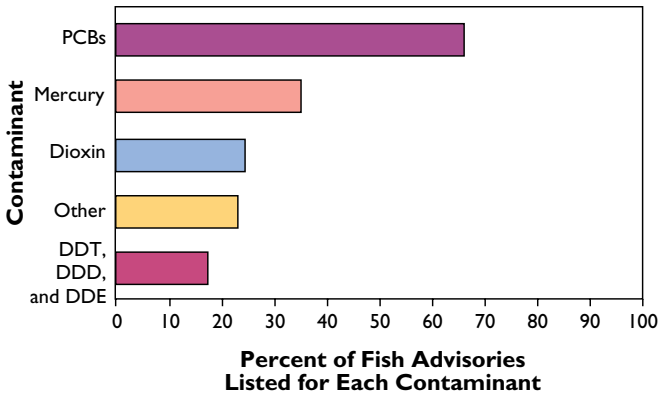

Figure 2-18. Pollutants responsible for fish consumption advisories in U.S. coastal waters. An advisory can be issued for more than one contaminant, so percentages may add up to more than 100 (U.S. EPA, 2004b).

Table 2-5. Summary of States* with Statewide Fish Advisories for Coastal and Estuarine Waters (U.S. EPA, 2004b)

State	Pollutants	Species under Advisory
Alabama	Mercury	King mackerel
Connecticut	PCBs	Bluefish Lobster (tomalley) Striped bass
Florida	Mercury	Bluefish Cobia Greater amberjack Jack crevalle King mackerel Little tunny Shark Spotted sea trout
Georgia	Mercury	King mackerel
Louisiana	Mercury	King mackerel
Maine	Dioxins Mercury PCBs	Bluefish King mackerel Lobster (tomalley) Shark Shellfish Striped bass Swordfish Tilefish All other fish
Massachusetts	Mercury PCBs	King mackerel Lobster (tomalley) Shark Swordfish Tilefish Tuna
Mississippi	Mercury	King mackerel
New Hampshire	PCBs	Bluefish Lobster (tomalley) Striped bass
New Jersey	PCBs Dioxins	American eel Bluefish Striped bass Lobster (tomalley)
New York	Cadmium Dioxins	American eel Blue crab Bluefish Lobster (tomalley) Striped bass
North Carolina	Mercury	King mackerel Shark Swordfish Tilefish
Rhode Island	PCBs Mercury	Bluefish Shark Striped bass Swordfish
South Carolina	Mercury	King mackerel
Texas	Mercury	King mackerel

*Hawaii has a statewide mercury advisory for several species of marine fish.

Table 2-6. The Four Bioaccumulative Contaminants Responsible, at Least in Part, for 92% of Fish Consumption Advisories in Estuarine and Coastal Waters in 2003—U.S. Coastal Waters (marine) (U.S. EPA, 2004b)

Contaminant	Number of Advisories	Comments
PCBs	60	Seven northeastern states (CT, MA, ME, NH, NJ, NY, RI) had statewide advisories.
Mercury	31	Twelve states (AL, FL, GA, LA, MA, ME, MS, NC, NJ, RI, SC, TX) had statewide advisories in their coastal marine waters; eleven of these states also had statewide advisories for estuarine waters. Seven states and the Territory of American Samoa had advisories for specific portions of their coastal waters.
DDT, DDD, and DDE	15	All DDT advisories in effect were in California (12), Delaware (1), Oregon (1), or the Territory of American Samoa (1).
Dioxins and furans	22	Statewide dioxin advisories were in effect in three states (ME, NJ, NY). Six states had dioxin advisories for specific portions of their coastal waters.

Table 2-7. The Four Bioaccumulative Contaminants Responsible, at Least in Part, for 92% of Fish Consumption Advisories in Estuarine and Coastal Waters in 2003—U.S. Great Lakes Waters (U.S. EPA, 2004b)

Contaminant	Number of Advisories	Comments
PCBs	30	Eight states (IL, IN, MI, MN, NY, OH, PA, WI) had PCB advisories for all five Great Lakes and several connecting waters.
Mercury	11	Three states (IN, MI, PA) had mercury advisories in their Great Lakes waters for Lakes Erie, Huron, Michigan, and Superior, as well as for several connecting waters.
DDT, DDD, and DDE	1	One state (MI) had a DDT advisory in effect for Lake Michigan.
Dioxins	15	Dioxin advisories were in effect in three states (MI, NY, WI) for all five Great Lakes and several connecting waters.

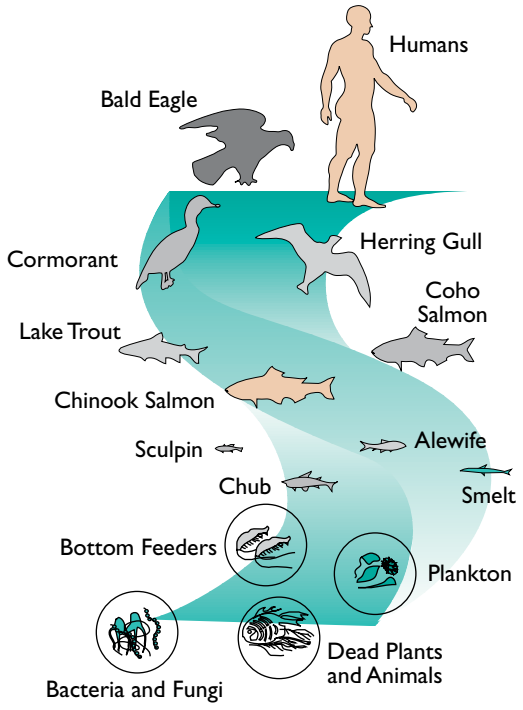

Figure 2-19. Bioaccumulation process (U.S. EPA, 1995b).

Boats rigged for commercial fisheries in Chincoteague Bay, MD (courtesy of Tim Carruthers, IAN Network).

Beach Advisories and Closures

For the 2003 swimming season, EPA gathered information on 4,080 beaches monitored nationwide (both inland and coastal) through the use of a survey. The survey respondents were state and local government agencies from coastal counties, cities, or towns bordering the Atlantic Ocean, Gulf of Mexico, Pacific Ocean, and the Great Lakes, and included agencies in Hawaii, Puerto Rico, the U.S. Virgin Islands, Guam, and the Northern Mariana Islands. A few of the respondents were regional (multiple-county) districts. Data are available only for those beaches for which officials participated in the survey. EPA conducts the survey each year and displays the results on the BEACH Watch Web site at http://www.epa.gov/OST/beaches. All data cited in this report were derived from data collected by the EPA's BEACH Watch Program during the 2003 swimming season (U.S. EPA, 2006c).

EPA's review of coastal beaches (e.g., U.S. coastal areas, the Great Lakes, and the coastal areas of Hawaii, Alaska, and the U.S. territories) showed that, of the 4,080 beaches reported in the survey responses, 4,070 were marine or Great Lakes' beaches. Of the coastal beaches monitored and reported, 839 (or 20.5%) had an advisory or closing in effect at least once during the 2003 swimming season (Figure 2-20). Beach advisories or closings were issued for a number of different reasons, including elevated bacterial levels in the water, preemptive reasons associated with rainfall events or sewage spills, and other reasons (Figure 2-21). Figure 2-22 shows that some of the major causes of public notifications for beach advisories and closures were stormwater runoff, wildlife, sewer line problems, and in many cases, unknown sources (U.S. EPA, 2006c).

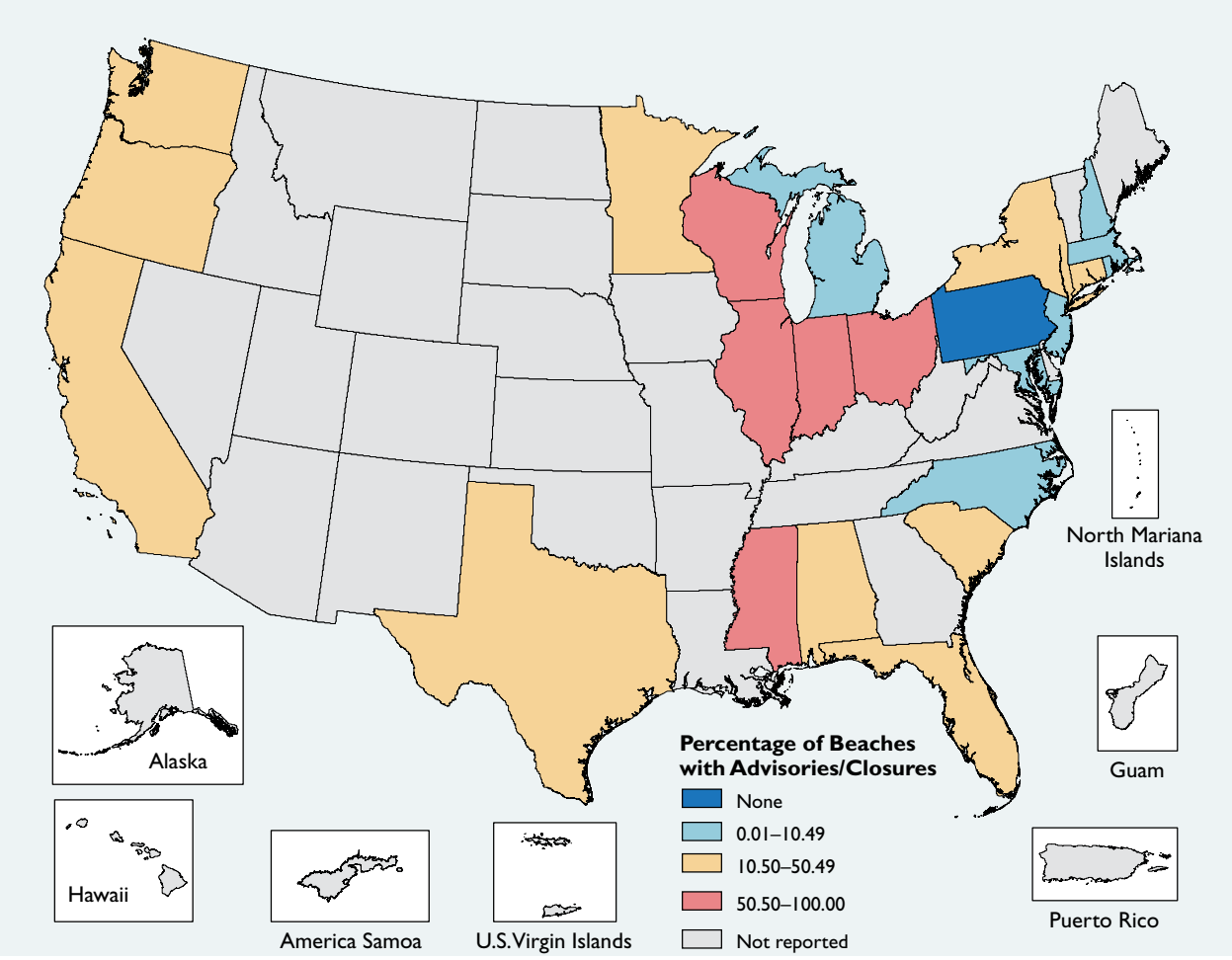

Figure 2-20. Percentages of monitored beaches with advisories/closures by coastal state in 2003. Percentages are based on the number of beaches that were reported for each state, not the total number of beaches (U.S. EPA, 2006c).

Highlight

Recovery of Endangered and Threatened Species

The primary purpose of the ESA of 1973, as amended, is the conservation of endangered and threatened species and the ecosystems on which they depend. Conservation efforts aim to recover populations of endangered species to a point where protection under the ESA is no longer necessary. NOAA's NMFS shares responsibility for implementing the ESA with the FWS.

The green turtle (*Chelonia mydas*) is one of 60 endangered or threatened species whose recovery is being addressed by NMFS (courtesy of David Burdick, NOAA).

In 2004, the NMFS had jurisdiction over a total of 60 species, comprised of 52 domestic and 8 foreign (found outside U.S. waters) species of salmon, sturgeon, sawfish, sea grass, corals, mollusks, sea turtles, and marine mammals. Of the 52 domestic species, 24 were listed as endangered and 28 were listed as threatened. Between 2002 and 2004, the status of 48% of the domestic endangered or threatened species listed under the ESA was stable or improving. These numbers are encouraging, especially given the large number of highly imperiled species listed in the past decade (NMFS, 2005b).

The recovery of threatened and endangered species is a long-term challenge. To organize and guide the recovery process, the ESA requires the development of recovery plans for listed endangered and threatened species. The ESA also requires that a report be sent to Congress every 2 years on the status of efforts to develop and implement recovery plans and on the status of all species for which recovery plans have been developed. In 2005, the NMFS published the *Biennial Report to Congress on the Recovery Program for Threatened and Endangered Species October 1, 2002–September 30, 2004* (NMFS, 2005b), which details recovery efforts for ESA-listed species and includes information on species status, current threats and impacts, the conservation actions undertaken, and the priority actions needed for recovery.

Of the 52 domestic species listed in 2004, 16 had recovery plans, and the recovery plans for 6 species (i.e., Hawaiian monk seal; eastern and western distinct population segments of Steller sea lion; the North Atlantic right whale; loggerhead sea turtle; Kemp's ridley sea turtle) were being updated. In addition, 32 recovery plans were in the draft stage, including those for 26 Evolutionarily Significant Units of Pacific salmon. There are active recovery teams for the white abalone, smalltooth sawfish, Kemp's ridley and loggerhead sea turtles, Hawaiian monk seal, and Steller sea lion. Additionally, take-reduction teams exist to curb the harassment, harming, pursuit, hunting, shooting, wounding, killing, trapping, capturing, or collection of specific species on the ESA list or the attempt to engage in any such conduct. Two active take-reduction teams, formed in

accordance with the Marine Mammal Protection Act, assist in the population recovery of ESA-listed species. These are the Atlantic Large Whale Take Reduction Team for humpback, North Atlantic right, and fin whales and the Pacific Offshore Cetacean Take Reduction Team for humpback and sperm whales (NMFS, 2005b).

Species-recovery strategies are active for all ESA-listed species. Among ongoing conservation and research activities, the following two efforts for sea turtles and the North American right whale are especially noteworthy:

- One cause of sea turtle population decline occurs when turtles are caught as bycatch (marine animals caught inadvertently in commercial fishing operations) and die. The Strategy for Sea Turtle Conservation and Recovery is a comprehensive fishing-gear-based approach to reducing sea turtle bycatch in the state and federal waters of the Atlantic Ocean and Gulf of Mexico. The strategy will result in bycatch-reduction measures across jurisdictional boundaries and various fisheries by targeting gear types that have the greatest affect on sea turtle populations. These actions will ultimately help reduce sea turtle deaths and encourage population recovery (NMFS, 2005b).
- The North Atlantic right whale is one of the most severely endangered whale species; as a result, there are two facets to North Atlantic right whale population recovery efforts. The Atlantic Large Whale Take Reduction Plan uses modifications to fishing gear and fishing practices to reduce serious injury and death due to entanglement in commercial fishing gear. In addition, the NMFS has developed a draft Right Whale Ship Strike Reduction Strategy to minimize right whale deaths resulting from collisions with ships. This strategy includes mariner education and outreach programs, interagency consultations, and consideration of modifications to ships' operations to reduce ship strikes (NMFS, 2005b).

The NMFS is working to meet the challenge of recovery for ESA-listed species and to encourage stakeholder involvement in both recovery planning and implementation. All NMFS's active recovery teams either have stakeholder representation on their teams or hold stakeholder meetings to keep the public informed of their progress and to obtain public comment. Stakeholders include federal, state, and local government agencies; affected industries; conservation or other nongovernmental organizations; or affected individuals. In some cases, recovery boards were appointed by a state's Governor and recovery plans were written by local sub-basin recovery teams (e.g., Pacific salmon recovery efforts in Washington). The NMFS helps support and actively participates on these teams and is adopting the teams' plans as draft recovery plans to be published for public comment. Experience has shown that true stakeholder involvement in the planning process results in buy-in to the recovery plan, both during and after the planning process. Stakeholder involvement is also emphasized in the NMFS's *Interim Endangered and Threatened Species Recovery Planning Guidance* (NMFS, 2006), which is now being field-tested in regional and field offices.

For further information on marine species protected by NOAA under the ESA, please visit the NMFS Office of Protected Resources Web site at http://www.nmfs.noaa.gov/pr. Recovery plans for domestic ESA-listed species under the NMFS's jurisdiction are also available at http://www.nmfs.noaa.gov/pr/recovery/plans.htm.

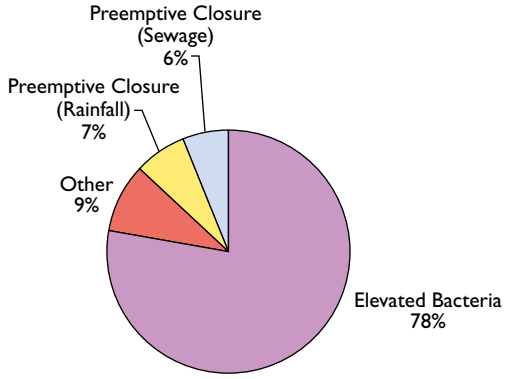

Figure 2-21. Reasons for beach advisories or closures for the nation (U.S. EPA, 2006c).

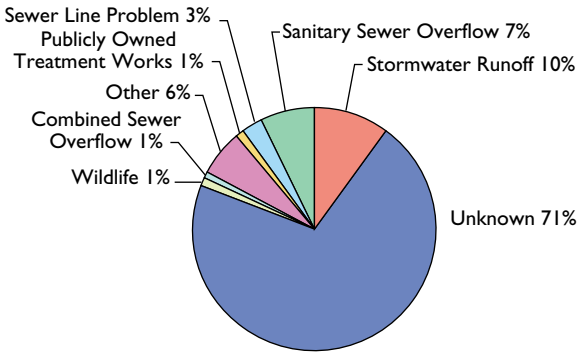

Figure 2-22. Sources of beach contamination resulting in beach advisories or closures for the nation (U.S. EPA, 2006c).

Flamenco Beach in Puerto Rico on a stormy morning (courtesy of Oliver Zena).